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Stone Dust

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Stone dust has a wide variety of uses and further uses are possible of development with increasingly exact knowledge of the qualities desired for various purposes. At the present time limestone dust is more widely utilized than the dust from other rock and its uses may be listed as follows:

1. Filler in asphalt paving mixtures
2. Filler in rubber
3. Filler in paint
4. Paper manufacture
5. Filler in oil cloth
6. Shoe polish
7. Putty
8. Tooth powder
9. Roofing
10. Glass manufacture
11. Ceramic industry
12. Dusting of mines
13. Agriculture limestone

Each of the above uses requires material having particular properties either with regard to size or physical or chemical characteristics. Specifications for limestone dust for filler in asphalt pavements generally read as follows:

When tested by means of laboratory sieves the mineral filler shall meet the following requirements:

Passing a 200 mesh sieve.... 65 to 100 per cent
Passing a 30 mesh sieve..... 100 per cent

The market for limestone dust as a filler in sheet asphalt pavements is very considerable. The weight of the mineral filler in sheet asphalt is approximately equal to the weight of the asphalt cement and there is not far from 1,500,000 tons of paving asphalt cement used every year. Fillers, other than limestone dust, are used in pavement mixtures but even allowing for this fact it must be apparent that thousands of tons of limestone dust are used annually in asphalt pavement mixtures. The mixture is rendered less susceptible to temperature

change and also is toughened by the addition of filler. Limestone dust is also used in asphalt mixtures which are largely utilized as joint fillers in pavements and for other purposes. Other stone dusts are also used as fillers in bituminous mixtures but not nearly as extensively as limestone.

When used as a filler in rubber, linoleum and paint the alkalinity should be low, and for paint and linoleum, low oil absorption is an essential characteristic. Paint, shoe polish, and similar products also require a pure white color and in practically all uses requiring the finest fillers, absence of grit is essential. Different whittings have different physical characteristics although their chemical analyses are much alike, due simply to the wide range of character of the material from which it is ground. Thus amorphous material such as pure chalk produces whitening different from that resulting by grinding crystalline material like marble.

For grinding, either roller, tube or ball mills are employed and the finest material is obtained by air or water separation. In some cases it is required that 98 to 99 per cent pass a 200-mesh sieve and in others a 300-mesh sieve.

Glass Manufacture

In glass manufacture calcium oxide is a necessary constituent and it may be introduced in the form of ground limestone, quicklime or hydrated lime depending upon a number of conditions. The impurities allowed may also be quite variable. Some kinds of optical glass demand high magnesium content. In other glass, high magnesium is permissible but its effect is to render it difficult for the mixture to melt. Nevertheless, high magnesium limestone is sometimes preferred to high calcium limestone.⁽¹⁾ The silica content for the best glass should run as low as 4 per cent but for the purer grades may run as high as 17 per cent. Alumina generally should be less than 3 per cent except in special cases

(1) See Rock Products, July 24, 1926, p. 59.

where 5 per cent may be allowed. Iron is not a desirable material since it colors the glass and for the best glass the amount should be limited to 0.2 per cent and may be allowed to extend up to 0.8 per cent for the poorer varieties. Sulphuric and phosphoric anhydrides should be less than 1 per cent.

Ceramic Industry

In the manufacture of pottery and porcelain, limestone and lime are used as fluxes. For the most part ground limestone is employed because it is less expensive. Magnesium limestone is desirable for the reason that when magnesia is present the points of vitrification and fusion are further apart. However, high calcium limestone is used and for glazes a low magnesium content is to be preferred. Generally the impurities present are not harmful in view of the small amount of calcium required.

Paints

Ground limestone is often used in the manufacture of certain kinds of paints. For this purpose the particles must be exceedingly fine and white. Magnesium seems to add to the spreading properties of the paint. Ground limestone or marble, natural chalk and other materials are used as "extenders" to increase the volume of the paint and although the main reason for their use seems to be to produce a cheaper paint, it is not impossible that ground limestone has a beneficial effect as do other so-called "extenders."

Agricultural Limestone

It is well substantiated that "a limestone country is a rich country" and it is highly important from the standpoint of general well being that the soil be kept replenished with an abundant supply of lime. Such soil is productive of abundant crops having qualities necessary for animal and human needs. Some states have witnessed tremendous growth in the use of agricultural limestone on their soils. Thus in 1911, Illinois used 32,000 tons of agricultural limestone, in 1919, 350,000 tons, and in 1925 something like 750,000 tons. Other states have not yet awakened to the possibilities of limestone as an agent for replenishing the lime which is removed from their soils, not so much by the crops themselves, as by leeching out and draining away. In 1924, 1,352,600 short tons of agricultural limestone valued at \$2,046,860 were used in the United States and in 1925, 1,970,000 tons were sold. The amounts used in the individual states in 1924 are now available and will be supplied if desired.

One of the questions with which producers and users of agricultural limestone are concerned is that of fineness, but as yet there is no definite answer to this question. In the West, limestone screenings have been most popular, while finely ground limestone is more largely used in the East. Naturally, the finer the limestone particles, the larger is the surface area exposed and the more rapid is the effect, but on the other hand coarser

material is less expensive to produce, and it is extremely difficult to mix finely ground limestone with the soil by the mechanical means employed as thoroughly as desired. So the whole subject of fineness is still in a somewhat moot state. There seems to be good reason for believing that greater fineness is required for magnesium limestone than for high calcium limestone, although when both are ground to pass a 100-mesh sieve they are equally effective.

With regard to the quantity of limestone required it has been stated that once the soil has become acid it is necessary to use two tons of limestone per acre every 6 to 10 years. So far as purity is concerned it is probably uneconomical to pay freight on stone containing over 15 per cent silica but otherwise even as high as 50 per cent silica is not objectionable.

That the agricultural limestone market is a great undeveloped field may be judged from the statement made by Dr. Firman E. Baer of the Ohio State University to the effect that at the present time in Ohio between 250,000 to 300,000 tons of agricultural limestone are being used and that ten to eleven million acres of land are under cultivation which should be using from one to two million tons of limestone every year.

Limestone for Mine Dusting

The dusting of mines with limestone furnishes still another growing market for limestone dust. It is a known fact that as little as a level teaspoonful of coal dust suspended in a cubic foot of air will form an explosive mixture but if this dust is mixed with stone dust, ignition is made more difficult. When the amount of rock dust is equal to the amount of coal dust the danger of an explosion is eliminated. The aim should be to have 75 per cent of all dust in the mine of an inert nature for such a mixture will blanket even a violent explosion. It is estimated that there are required an initial quantity of 5 pounds of dust per foot of entry amounting to 13 tons per mile. The rock dust is scattered on the floors and on the ribs and timbers of passageways, and is also placed on shelves so arranged as to precipitate the dust into the air thus forming a blanket in case of an explosion.

Limestone is especially valuable for mine dusting for it is mainly calcium carbonate and is comparatively free from silica which is injurious to the lungs. In addition, the fact that limestone is a white powder thus greatly aiding in lighting the mines is a double advantage. Again the general distribution of limestone, the comparative ease with which it can be ground, and its low cost are all in its favor for mine dusting.

The Bureau of Mines specifications require that 100 per cent shall pass a 20-mesh sieve and 50 per cent shall pass a 200-mesh. That the dusting of mines is a recognized efficient method of preventing explosions in coal mines is attested by its advocacy by the U. S. Bureau of Mines and the further fact that credit of 10 to 20 cents per \$100 of payroll is al-

lowed by the National Council on Compensation Insurance in at least 16 coal mining states. Further, it has been announced by The Associated Companies, insurance underwriters in the coal mining field, that after October 1, 1926, it will not insure for compensation any gaseous or dusty bituminous coal mine unless it is rock dusted. Sprinkling or watering will not be accepted in lieu of rock dusting. The use of limestone dust has only been started in this country and should be developed in every legitimate way by limestone producers.

Cost of Producing Limestone Dust

Enough has been said to show that limestone dust has potential possibilities for very wide markets. It will not be amiss to give some idea of the cost of grinding limestone to the fineness required for the most exacting uses and the following figures have been supplied as the result of a commercial engineering analysis made by one manufacturer of pulverizing equipment. It is to be recognized, of course, that many items will enter to change these figures in different plants but they will be useful in showing how the costs are made up.

A Table Giving Operating Cost

Depreciation—(cost plus installation)— \$13,000	
10-year life.....	\$1,300.00
*Average interest at 6%— $\frac{11}{10} \times \$13,000.00 \times \frac{.06}{2}$	429.00
Repairs and maintenance.....	300.00
Total fixed charges per year.....	\$2,029.00
Fixed charges per day—\$2,029.00—280 days....	\$7.25
Fixed charges per hour—\$7.25—9 hours.....	\$0.81
Operating labor—1 man.....	.50
Cleaning—5 men 40 minutes per day divided by 9 hours x 50 cents per hour.....	.19
Power—75 H. P. x \$100.00 per H. P. per year divided by 280 days divided by 9 hours.....	2.98
Total cost per hour.....	\$4.48

Cost to Pulverize One Ton of Limestone

99% through 150-mesh	$\$4.48 \div 2\frac{1}{2}$ tons.....	\$1.79
99% through 200-mesh	$\$4.48 \div 1\frac{3}{4}$ tons.....	\$2.56
99% through 300-mesh	$\$4.48 \div 1$ ton.....	\$4.48

Coarser grinding would necessarily be less expensive than shown above and it must be remembered that other costs are involved before the material is finally marketed.

*Allowing for interest earned by depreciation reserve.

W. M. WEIGEL LEAVES U. S. BUREAU OF MINES

Mr. W. M. Weigel, who for the past five and one-half years has been Mineral Technologist of the United States Bureau of Mines at their Southern Experiment Station, at Tuscaloosa, Alabama, and Washington, D. C., has accepted a position with the Missouri Pacific R. R. Company. His headquarters will be at the offices of the Railway Company, Railway Exchange Building, St. Louis, Missouri.

The Missouri Pacific R. R. under its present progressive management realizes that the prosperity of the railway depends upon the prosperity and growth of the country which it serves, and as mineral commodities constitute a very large percentage of all railway freight traffic it is only natural that the Railway Company wishes to be as helpful to the producers and consumers of mineral products and owners of undeveloped mineral properties as is possible. With this plan in mind Mr. Weigel will make a study of the mineral resources of all kinds in the Missouri Pacific territory with the object of assisting the producer and consumer in any legitimate way.

BUREAU OF PUBLIC ROADS TO CONDUCT CURING TESTS

The U. S. Bureau of Public Roads is planning to construct in the near future at the Arlington Experimental Station a number of concrete slabs for observation as to the effect of various methods of curing. It is planned to construct about 40 slabs 6 inches thick, 2 feet wide, 200 feet long and of various mixes. Some of these slabs will be laid on a dry subgrade, while others will be placed on a wet subgrade and some will be reinforced and others without reinforcement. Calcium chloride will be used as an admixture in some of the slabs, while others will be treated on the surface with either calcium chloride or sodium silicate. Some of the slabs will be cured under conditions similar to the ordinary construction job and others will be cured under as nearly ideal conditions as it is possible to attain.

At the end of each of the long slabs, a slab 2 feet wide and about 6 feet long will be constructed for determining the friction between the slabs and the subgrade. After this latter test has been completed the slabs may be used for a bending test to determine the modulus of rupture. Details of this series of experiments are now being worked out and it is anticipated that construction of the slabs will start within a short time.—*Highway Research News*.

"STUDIES IN MACADAM ROAD DESIGN" GIVEN WIDE PUBLICITY

We are particularly pleased to learn of the marked interest which the article by Mr. Goldbeck entitled "Studies in Macadam Road Design" has aroused in the highway engineers' field.

This article first appeared in the April and June issues of The Crushed Stone Journal and has subsequently been reprinted in the August 5 issue of the Engineering News-Record and the July issue of Better Highways.

Permission has also been granted to permit of its publication in Czechoslovakia and in the Russian magazine, "American Engineering."

Depletion and Its Relation to Income Tax and Cost Accounting

By

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Editor's Note.

Depletion and its relation to income tax and cost accounting is a matter of very great importance to the producer of crushed stone. It is impossible to accurately determine production costs without taking this item into consideration. It is well to remember that depletion is just as important a factor in production costs as labor or fuel, and there can be no intelligent determination of net income if a producer who is entitled to depletion deductions does not make proper account of it in his tax return. There also seems to exist some confusion as to the proper differentiation between "depletion" and "depreciation." The National Association felt, therefore, that a statement of depletion principles with especial application to the crushed stone industry would be very helpful to the industry.

The following article has therefore been prepared by our Income Tax Counsel, Mr. H. R. Stutsman, in collaboration with Mr. Elmer T. Cummins, Consulting Engineer.

In this connection we would also like to bring to the attention of our members, the fact that the Association, through its Income Tax Counsel, Mr. Stutsman, is prepared to give advice on all matters pertaining to income tax problems and urges that our membership take full advantage of this service.

DEPLETION: WHAT IT MEANS

(a) The meaning of the word depletion is to reduce, lessen, exhaust or empty, and therefore, when the term depletion is applied to a deposit of any character, it means that it is being or will be, reduced, lessened, exhausted, or emptied.

A deposit of stone is depleted when an extraction of any part of the original contents is made and if this extraction is carried on over a period of years or time, the act of depleting the deposit is taking effect.

Any deposit that is derived from or produced by nature, such as stone, is subject to depletion in the full meaning of the word when any of that deposit is removed, this being especially true on account of its being what is termed a natural resource.

(b) Depletion should not be confused with depreciation, which is an entirely different matter. Depreciation means,

and especially under the Federal income tax laws, exhaustion, wear and tear and obsolescence, and it is applied generally to physical property, such as plant, machinery and equipment, etc. It can, therefore, be seen that the two subjects are different and that one, depletion, deals with the reduction or extraction of a given deposit, and the other, depreciation, deals with the exhaustion, wear and tear of a plant, piece of machinery, or equipment.

(c) Depletion when concerned with a natural resource deposit, such as stone, is an actual fact and should be taken into consideration with just as much care as with depreciation or other costs entering into the production of the same. Profit from the sale of any commodity is the difference between the selling price and the cost; and the same principle applies in the profits from the operation of a stone deposit; that is before the actual profit can be determined for any year, all the costs of production should be taken into consideration, including depreciation and depletion.

By deducting a certain amount for depreciation each year for each piece of machinery, or equipment, a depreciation reserve is created in which the original cost of that piece of machinery or equipment, as the case may be, is returned at the end of its useful life. The same principle applies to depletion; that is, a certain amount of depletion is deducted each year from income, and is set aside, so that at the end of the life of the deposit, the original cost or value of the deposit will have been returned. And until this certain depletion is deducted each year and in a manner that will return the original cost or value of the deposit, the true profits for that year will not be reflected.

A simple example of depletion, its deduction and return of the original investment, is as follows:

"A" company, in 1916, purchases a tract of land, containing a stone deposit, for..	\$50,000.00
The deposit is estimated to contain recoverable stone of.....	1,000,000 tons
The unit of cost and depletion per each ton of stone is, therefore.....	\$.05

The "A" company should, therefore, deduct depletion to the amount of \$.05 per ton for each ton of stone produced each year; and then, at the end of the deposit containing the 1,000,000 tons, the original investment of \$50,000 will have

been returned to them. By using a theoretical production, the depletion would be as follows:

Cost of deposit in 1916.....	\$50,000.00
Recoverable tons of stone.....	1,000,000 tons
Unit of cost or depletion, per ton.....	\$.05
<i>Year</i>	<i>Production or sales in tons</i> <i>Amount of depletion at \$.05 per ton</i>
1916	100,000 \$5,000.00
1917	150,000 7,500.00
1918	175,000 8,750.00
1919	200,000 10,000.00
1920	180,000 9,000.00
1921	150,000 7,500.00
1922	45,000 2,250.00
Total	1,000,000 \$50,000.00*

*Return of original cost.

It is, therefore, shown that the "A" company has had returned to them their original investment of \$50,000.00. Suppose that over this seven-year period, in which the 1,000,000 tons of stone were produced, their gross and net income was as follows:

Gross sales over 7 years of 1,000,000 tons	\$1,000,000
Operating cost over same period....	\$600,000
Sales and general expense.....	200,000
Depreciation)	50,000
Depletion	50,000
The total cost, including depletion, was	\$900,000 900,000
The net profit would therefore be.....	\$100,000

Now, supposing no provision for depletion had been made or no deduction taken; the book profits at the end of the life of the deposit would show \$150,000.00; and yet this is not the true fact, because the "A" company sold 1,000,000 tons of stone that cost them \$50,000 plus whatever amount it took to produce it; and in order to arrive at the actual profit, the original cost must be taken into consideration. The same applies to each year's business; that is, depletion should be deducted with some uniformity on the production basis, so that at the end of all the years of the operations, the cost or value of the property will have been returned.

The question arises as to what to do if the estimate of 1,000,000 tons be too large or too small. Then, of course, in either case, the true amount to be returned through depletion deductions will not be realized. To guard against this, it is well to check up on the remaining reserves at the end of each year or at some time before the deposit is exhausted, and determine how many tons are remaining. If an error of a large tonnage is found, the correct tonnage should be set up and these tons divided into the remaining amount of capital to be returned, which would give a new depletion rate for the balance of the life. For example, assume that the "A" company found that at the beginning of 1919, instead of having 575,000 tons left in the deposit, it only had 400,000 tons. Depletion for future years would

be deducted on the basis of the 400,000 tons divided into the remaining amount to be returned through depletion, as follows:

Original cost 1916.....	\$50,000.00
Original estimate of reserves.....	1,000,000 tons
Unit of cost or depletion.....	\$.05
Production 1916, 1917 and 1918.....	425,000 tons
Depletion deducted at \$.05 per ton....	\$21,500.00
Remaining amount of cost Jan. 1, 1919..	\$28,500.00
Remaining correct tonnage Jan., 1919....	400,000 tons
Unit of cost or depletion for 1919 and subsequent years	\$.07125

The same principle should be applied where the original tonnage estimate is too low.

BASIS UPON WHICH A DEPLETION DEDUCTION IS ALLOWABLE UNDER THE FEDERAL INCOME TAX LAWS

In drafting the Federal income tax laws, the congress realized that in the case of natural resources and wasting assets, depletion was a factor and an allowable deduction from income. The essence of the Federal income and excess profit tax laws is that in computing net income, there shall be allowed as deductions, in the case of mines, oil and gas wells, other natural deposits and timber, a reasonable allowance for depletion.

Under the income and excess profits tax laws, depletion may be deducted for any deposit owned by an individual or corporation where actual depletion is being effected. Three separate bases are allowable for determining the total amount of depletion, and they are as follows:

1. Any property or deposit owned prior to and on March 1, 1913, may be depleted on the basis of the fair market value of the property or deposit on that date.
2. Any property or deposit acquired after March 1, 1913, the basis of depletion deductions shall be the cost of the property or deposit.
3. Any property acquired either prior or subsequent to March 1, 1913, and not purchased as a proven commercial deposit, and where, through development and exploitation after March 1, 1913, a discovery of a commercial deposit is made that was not previously known to exist, and where the fair market value of the property becomes disproportionate to its cost on account of the discovery, the basis of depletion deductions for 1918 and subsequent years shall be the value of the property or deposit at or within 30 days of the discovery. (Depletion deductions on discovery not allowable prior to 1918 on account of the fact that under prior tax laws no discovery provisions were made.)

DEPLETION BASED ON MARCH 1, 1913, VALUE

As previously stated, any property or deposit owned prior to March 1, 1913, the depletion deductions for that property or deposit shall be based upon the fair market value as of March 1, 1913.

In order to determine or deduct the correct amount of de-

pletion each year on this basis, two calculations or estimates are required.

1. The fair market value of the property or deposit as of March 1, 1913:

2. The recoverable units of tons, yards, etc., contained in the property or deposit on March 1, 1913.

By dividing the number of units in the property into the value, the unit of depletion will be found; and this unit, multiplied by the production for any year, will give the amount of depletion allowable as a deduction for that year.

To arrive at the fair market value of any property or deposit on March 1, 1913, is very difficult and especially so where the valuation is being made several years after that time. The income tax regulations state that the value sought to be established should be arrived at by assuming a transfer between a willing seller and a willing buyer as of that particular date.

Any value so claimed by a taxpayer will be subject to approval by the Commissioner of Internal Revenue, and any evidence having a bearing on the value claimed will be given due consideration, such as cost, actual sales and transfers of similar properties, market value of stock or shares, royalties and rentals, value fixed by the owner for purpose of the capital-stock tax, valuation for local or State taxation, partnership accountings, records of litigation in which the value of the property was in question, the amount at which the property may have been inventoried in probate court and, in the absence of better evidence, disinterested appraisals by approved methods.

The recoverable reserves as of March 1, 1913, of a property may be arrived at by estimating the number of units (acres, tons, or yards) contained in the property. This estimate should be based on all relative or pertinent information, such as past production and recovery, actual subsequent production, results of drilling, testing and examination, etc.

Assuming that a tract of land containing 50 acres had, prior to March 1, 1913, produced 500,000 tons from 25 acres, it would be reasonable to believe and estimate that the balance of 25 acres would produce the same amount, unless, of course, conditions were known to be different on the latter acreage and the recovery per acre was declining.

Where no estimates were made as of March 1, 1913, it is allowable, in determining the recoverable reserves in a tract of land as of that date, to use the actual subsequent production plus whatever reserves are estimated to be in the property at the date the estimate is made.

DEPLETION BASED ON COST

For any property, tract or deposit acquired after March 1, 1913, the basis of depletion deductions shall be cost. No difficulty should arise as to the depletable sum in this case. However, it is well to quote the income tax regulations on the determination of cost of deposits:

"In any case in which a depletion or depreciation deduction is computed on the basis of the cost or price at which any mine, mineral deposit, mineral

right or leasehold was acquired, the owner or lessee will be required to show that the cost or price at which the property was bought was fixed for the purpose of a bona fide purchase and sale, by which the property passed in fact as well as in form to an owner other than the vendor. No fictitious or inflated cost or price will be permitted to form the basis of any calculation of a depletion or depreciation deduction, and in determining whether or not the price or cost at which any purchase or sale was made represented the actual market value of the property sold, due weight will be given to the relationship or connection existing between the person selling the property and the buyer thereof."

The same principle should be applied in determining the recoverable reserves as that suggested under the March 1, 1913, procedure; that is, an estimate of the recoverable reserves should be made and these reserves, divided into the cost, will result in a unit of depletion or cost, and this unit, multiplied by the yearly extraction, will give the proper amount of depletion to be deducted each year.

DEPLETION BASED ON DISCOVERY

The provisions in the income tax laws and regulations that allow depletion deductions based upon a discovery valuation are very stringent and discoveries are mostly made in the case of metal mines and oil properties. The general facts necessary to establish a right to a discovery valuation are that the property in question be acquired without the actual knowledge that the mineral sought resides therein, and that after the discovery is made by development and exploitation, the value of the property then becomes entirely disproportionate to its cost. No discovery will be allowed where the property acquired is proven and known to contain the mineral sought even though it is purchased for a nominal sum.

A portion of the income tax regulations treating discovery of mines states:

"To entitle a taxpayer to a valuation of his property, for the purpose of depletion allowances, by reason of the discovery of a mine after February 28, 1913, the discovery must be made by the taxpayer after that date, and must result in the fair market value of the property becoming disproportionate to the cost. The fair market value of the property will be deemed to have become disproportionate to the cost when the newly discovered mine contains mineral in such quantity and of such quality as to afford a reasonable expectation of return to the taxpayer of an amount materially in excess of the capital expended in making such discovery plus the cost of future development, equipment, and exploitation.

"For the purpose of these sections of the Act a mine may be said to be discovered when (1) there is found a natural deposit of mineral or (2) there is disclosed by drilling or exploration, conducted above or below ground a mineral deposit not previously

known to exist and so improbable that it had not been, and could not have been, included in any previous valuation for the purpose of depletion, and which in either case exists in quantity and grade sufficient to justify commercial exploitation."*

It would appear from the above that discoveries in the crushed stone industry would be very limited on account of the fact that before property is acquired for the production of crushed stone, it is usually known to exist; however, there are probably cases where discoveries are made, and the taxpayers are entitled to set up such values on their books for depletion purposes.

An example of the benefits derived from the discovery basis would be as follows:

"B" acquires a tract of land containing 100 acres, not connected with the deposits upon which he is operating, say, for right-of-way purposes, in 1915, for \$10,000.

During the year 1918, by drilling and testing this property, a commercial stone deposit is found, and the estimated recoverable tons of stone are 2,000,000.

On this basis, it is assumed that the value of such a deposit would be \$100,000 in excess of the cost and all necessary amounts to develop the same.

Depletion would then be allowable to the amount of \$100,000 divided by 2,000,000 tons, or \$.05 per ton instead of \$10,000 divided by 2,000,000 tons or \$.005 as based on cost.

LEASEHOLDS

In the foregoing statement and examples, it has been assumed that the property or deposits in question are owned in fee and are not leaseholds. Leaseholds can be valued as of March 1, 1913, for depletion deductions under the same basis that fee-owned property can, with the exception that depletion deductions from such are allowable only for 1918 and subsequent years. The Bureau of Internal Revenue has held that under the income tax laws prior to 1918, no provisions were made in the law allowing a lessee to deduct depletion based upon a March 1, 1913, value. However, a recent decision of the United States Board of Tax Appeals, in the Appeal of the Royal Collieries Company, decided January 27, 1925, held:

"The lessee of coal lands is entitled under the Revenue Act of 1916 to the deduction of a reasonable allowance for exhaustion of leasehold based upon March 1, 1913, value or for depletion upon the same basis, either deduction being computed proportionately with the amount of coal mined in the taxable year."

It would, therefore, seem that a lessee is entitled to a deduction for 1916 and 1917 as well as 1918 and subsequent years as is now allowable.

For a leasehold acquired after March 1, 1913, and where only a royalty is paid and charged to operating cost, no de-

ductions for depletion are allowable. If a cash consideration is made, together with the royalty, that cost, of course, is subject to depletion.

SUMMARY

It is not the purpose of this article to go into the ramifications of the income tax laws and all the allowable deductions, but only to present in a very general way what the taxpayers of the crushed stone industry are entitled to deduct in the way of depletion. However, it must be remembered that each case presents its own problem and will be settled accordingly by the Bureau of Internal Revenue. The Bureau has prepared a Form "F" to be filled out by the taxpayer who claims deductions from income on account of depletion. This form should be very carefully prepared and represent the true facts and condition of each property for which depletion is claimed.

Not only is depletion a question of a deduction from an income tax standpoint, but as hereinbefore shown, an actual cost to be considered in the production of crushed stone, and must, for correct accounting purposes, be taken into consideration.

A few simple facts the books or records of a company should show relative to their now owned property and subsequent purchases:

1. Date property or deposit acquired.
2. From whom purchased.
3. Consideration, cash, stock, etc.
4. Total number of acres.
5. Estimated recoverable units at date of purchase and number of acres containing deposits.
6. Acres containing no commercial stone.
7. Value per acre of land not containing stone.
8. Value of quarried acres after operations.
9. Production from property each year.

An example of March 1, 1913, value would be as follows: Supposing "C" company purchased a tract of 100 acres in 1908 for \$10,000 cash, of which 60 acres contained 1,200,000 tons of stone, 40 acres being farm land and containing no stone:

Cost of tract, 1908.....	\$10,000.00
Total acres	100
Cost per acre	\$100.00
60 acres of deposit, cost.....	\$6,000.00
40 acres of farm land, cost.....	\$4,000.00
March 1, 1913, value of 60 acres by valuation	\$50,000.00
Estimated recoverable stone.....	1,000,000 tons
Unit of depletion per ton.....	\$.05
Balance of tract of 40 acres remaining on books at cost, or.....	\$4,000.00

*Regulations to be issued under the Act of 1926 may vary somewhat from the above which is quoted from Regulation 65 under the Act of 1924.

Severe Penalties Proposed for Overloading

The Southwestern Freight Bureau has received a proposal for the approval of member carriers which would impose drastic penalties for the overloading of a number of commodities, including crushed stone.

As the opinion seems to prevail that it is the intention of those favoring this proposal to recommend its acceptance in other sections of the country, the National Association felt that it should take immediate steps to defeat what seems to be an unwarranted action on the part of the Southwestern carriers.

The changes in question are known as Items 8499 and 8530, Docket Bulletin 355, and are published herewith for your information.

Rules Governing overloaded cars from, to and between Southwestern Freight Bureau territory: Correct the present varying rules governing the handling of overloaded cars and the charges to be assessed for transfer thereon to provide a uniform rule applicable on all commodities except grain between points in S. W. F. Bureau Territory as follows:

(a) When cars are weighed at point of origin and found to be loaded in excess of the maximum weights provided in (X) shipper will be required to unload a sufficient quantity to reduce the minimum weight to the authorized maximum. No charge for switching will be made.

(b) In case a car is found, after leaving point of origin and before arrival at destination to be loaded in excess of the maximum weight provided in (X) its contents will be transferred into a car of suitable capacity except that, if such car is not available at the weighing station, two cars will be used, the weight of the entire shipment to be divided as nearly as equal as possible, the two cars to be billed at the actual weight, subject to the prescribed minimum weight for each car.

(c) A charge of two (2) cents per 100 pounds, plus switching charges as per tariffs lawfully on file with the Interstate Commerce Commission or with State Commissions, to and from the transfer track, will in all cases (except as per paragraph (a)) be made to cover the cost of transfer and extra switching incident thereto. Such charges to be added in red ink in the freight column of the way bill as "charges for transferring overloaded car."

(d) In case a car is handled to destination and found to be loaded in excess of the maximum weight provided

in (X) charges on the shipment will be assessed at the established carload rate for weight equal to the maximum weight provided in (X) plus a charge at double the established carload rate on the weight in excess of the maximum provided in (X).

X (Each carrier to show reference to their issue providing maximum load limits.)

The lack of uniformity in the rules of the various Southwestern carriers causes constant agitation and dissatisfaction, and it is felt that the adoption of a uniform rule as suggested will not only be satisfactory to shippers, but will prove quite advantageous to the carriers in eliminating claims and controversial correspondence

Switching charges at points in Southwestern Freight Bureau territory: Provide in switching tariffs of various lines a switching charge to cover the movement of cars discovered to be overloaded at track scale stations from such track scale to the transfer track and back to the train yard, as follows: "Charge of (individual carriers to insert figures equal to double the regular one way switching charge applicable at station involved) will be assessed for switching cars which are found to be overloaded, from the track scale to the transfer track and back to the train yard."

In the interest of uniformity, it is desired to provide in connection with all lines tariffs a charge equivalent to double the switching charge assessed at the station involved, to cover the double switching service necessary to cut the car out when it is found to be overloaded, and place it on the transfer track for readjustment of the load to eliminate the overload, and the return of the car to the train yard for outbound movement, which involves two separate switching services.

The initial step taken by the National Association to combat the proposed rules was to wire Chairman Leland, of the Southwestern Freight Bureau as follows:

"As representative of crushed stone producers in affected territory, this Association desires to enter formal protest against Items 8499 and 8530 contained in your Docket Bulletin 355 and scheduled for consideration not earlier than June 11. We ask no action be taken respecting these items until interested producers have opportunity to present information justifying protest."

This telegram was followed with a letter outlining in detail the objections of the crushed stone producers to

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The President's Page

Board of Directors Meets at Atlantic City

There have been few, if any, better attended, more enjoyable, or more constructively helpful meetings of the Board of Directors than that held at the Hotel Ambassador, Atlantic City, July 30. When the meeting was called to order, promptly at 10 o'clock in the morning, there were twenty-one directors present and four invited guests.

It was both pleasurable and gratifying to welcome Mr. Wilson from the Pacific Coast and to hear his earnest and loyal message, voicing, as it did, his faith in the work we have undertaken and pledging increased support from the Golden State. As a further token of his active interest in our welfare, he brought with him two applications for membership from producers in his territory which were accepted and approved by the Board.

Others also came from considerable distances; but upon these we had fully counted—Mr. Blair, of Wisconsin, Mr. Doolittle, of Canada, and Mr. McCroskey, of Tennessee. The newly formed Southwestern Division of the National Crushed Stone Association sent as their representative, upon our invitation, Mr. Hank, their engineer-secretary, formerly with the State Highway Department of Texas. Mr. Cartwright represented Indiana and Mr. Bair, Ohio. The others were from lesser distances.

The absence of several was prevented by illness, ex-President Sloan having to leave Atlantic City just before we arrived to return to Chicago under his doctor's orders. Ex-President Schmidt is in the Roosevelt Hospital in New York, while Mr. Dodson was quite ill in Texas. To each of these men, who have contributed so much to the progress of our Association, the Board wired its sympathy and hope for a speedy recovery.

Mr. Goldbeck and Mr. Boyd were, of course, with us also.

That such a group of men, busy as they are now in the conduct of their own industry will devote the several days required to assemble for the purpose of promoting the advancement of our general welfare is not only a token of their belief that something worth while can be done for the industry, but also brings to each of us a realizing sense of the responsibility that rests upon us to do our own part as well as we may for the common cause.

Elsewhere in this issue appears a more detailed report of this meeting, with a full roster of those present. To each of them our gratitude is due for the unselfish and loyal service they have rendered.

Board Approves Constructive Program

From the time the meeting opened at 10 o'clock in the morning until luncheon was served at 3 o'clock, there was continuous discussion definitely confined to the matters presented in the report of the President to the Board of Directors. It is not feasible in the space at our disposal to comment in detail upon the various matters discussed, and the several upon which definite action was determined, other

than to briefly state that the Board approved engaging a research engineer to work in the U. S. Bureau of Standards and the establishment of our own laboratory in Washington under the directorship of Mr. Goldbeck when and at such time as the finances of the Association render feasible this procedure. It was the expressed desire of the Board that though we build for the future along logical and normal lines of expansion, we must retain that sense of proportion and conservatism which will prevent our following a will-o'-the-wisp or exceeding our annual financial income. In this regard it will interest our members to know that carrying on the work which we now have undertaken without further expansion for the rest of this year will leave a balance in our treasury at the time of the next convention of approximately \$5,000, and this despite the fact that we will have expended during the year somewhat over \$37,000. While this expenditure may seem large, it none the less has the merit of being safely within our income and having been wisely and intelligently used.

* * * * *

Detroit Selected As 1927 Convention City

It will interest every member of the Association to know that at its recent meeting the Board of Directors unanimously voted to hold the next convention the week of January 17 in Detroit. Opinion in this regard seemed to have crystallized to an extent that resulted in enthusiastic approval of this motion. Detroit is reasonably centrally located east and west as regards distribution of our membership and not too far north to prevent a full attendance from the northern tier of the southern states northward.

The hotel accommodations in Detroit apparently can not be excelled, and there is every reason to believe that we will next year hold the largest attended convention in the history of the Association. It is confidently expected that the selection of Detroit will be popularly received, and it augurs well for the success of the convention to know that the civic boards of Detroit, as well as the hotels themselves, have shown a marked desire to entertain our next convention.

The fact that Detroit is so near the Canadian border promises a large attendance of our Canadian members, and we believe that Mr. Doolittle will bring to Detroit almost as large a Canadian delegation as welcomed us in Montreal.

* * * * *

Contributions Through Local Associations To Be Expressed In Terms of Memberships

Many of our member companies, in addition to their memberships in the National Association, contribute to its revenue by special contributions made through the channels of various local associations. Consequently the number of memberships held by each firm as published from time to time in the Journal does not properly represent the

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Production of Stone Increased in 1925

Production of stone in the United States in 1925, exclusive of stone manufactured into lime, cement, and abrasive materials, or crushed into sand, amounted to more than 114,310,000 short tons, valued at about \$171,420,000, according to a preliminary compilation of reports from producers made by the Bureau of Mines, Department of Commerce. The figures indicate an increase of about 11 per cent over the 1924 production figure of 103,184,120 short tons. Final figures for 1925 production may be somewhat greater than the preliminary figures.

Stone sold as building stone, curbing, crushed stone, flux and refractories increased in quantity and stone sold as monumental stone, paving blocks, and flagstone decreased. The total of stone sold for rubble, riprap, manufacturing industries, and miscellaneous uses is estimated as somewhat more than in 1924.

Building Stone

The building stone sold amounted to 30,115,000 cubic feet—6 per cent more than in 1924. This includes stone for architectural work and relatively low-priced stone for rough construction, such as foundations, bridges, and unshaped face stone for buildings and retaining walls.

More than one-half of the building stone sold was limestone, about 15,760,000 cubic feet, the sales of which were 9 per cent more than in 1924. The largest quarry center for building limestone, the Bedford-Bloomington district in Indiana, reported sales of 11,803,890 cubic feet in 1925, an increase of 7 per cent over 1924. There was also an increase in the sales of high grade building limestone quarried at Russellville, Ala., Leuders, Tex., and the districts in Minnesota covered by Mankato, Mantorville, Kasota, and Winona, total sales from which were 331,000 cubic feet, valued at \$593,000. Sales of limestone for rough construction also increased.

Total sales of granite for building stone (about 7,608,000 cubic feet, valued at \$6,283,000), represented nearly one-fourth of the building stone produced in 1925, and an increase of about 11 per cent over 1924. The granite sold for architectural work, including rough and dressed stone, was approximately 2,163,000 cubic feet, valued at \$5,560,000, an increase in quantity of about 30 per cent over 1924. Stone sold for rough construction also showed increased sales. The principal States producing granite for architectural building stone were Massachusetts (461,410 cubic feet), Maine (394,000 cubic feet), New Hampshire (169,500 cubic feet), California (177,700 cubic feet), North Carolina (25,000 cubic feet), Minnesota (93,750 cubic feet), and Connecticut (85,200 cubic feet).

Pennsylvania, Maryland, Massachusetts, and Maine produced a considerable quantity of stone for rough construction work.

Total sales of sandstone for building (3,028,000 cubic feet, valued at \$2,644,000) decreased about 15 per cent in quantity. Sandstone for architectural work, including rough, sawed, and finished stone, amounted to 2,328,000 cubic feet, valued at \$2,580,000, an increase in quantity of 10 per cent. Ohio produced 1,491,000 cubic feet, and New York 302,000 cubic feet. Kentucky, Pennsylvania, Washington, Massachusetts, and other States also reported considerable amounts.

Marble sold for building stone in 1925 amounted to 2,864,000 cubic feet, valued at \$9,600,000, an increase of 10 per cent in quantity. The principal States producing building marble are Tennessee (785,320 cubic feet), Missouri (782,920 cubic feet), Vermont (761,600 cubic feet), and Georgia (191,540 cubic feet). Alabama, Alaska, Arkansas, California, Colorado, Maryland, Massachusetts, New Jersey, New York, North Carolina, Pennsylvania, and Utah also furnish marble for building purposes. The product from Georgia and Missouri is chiefly for exterior building and that from Tennessee and Vermont for interior work. Serpentine (67,370 cubic feet, valued at \$502,248) quarried in Maryland, Massachusetts, New Jersey, Pennsylvania, and Vermont is included in the marble figures. There was also sold 9,130 short tons of serpentine, valued at \$49,357, chiefly for stucco and terrazzo work. The total sales of marble reported from Carthage, Mo., for 1925, were 517,020 cubic feet, valued at \$1,098,251, an increase in quantity of 12 per cent over 1924. This includes a small quantity of monumental stone. Marble quarried at Phenix, Mo., chiefly for interior building work, amounted to 191,630 cubic feet in 1925.

Basalt and various miscellaneous varieties of stone used chiefly for rough construction showed increased output for 1925.

Monumental and Memorial Stone

Stone sold for monumental and memorial work in 1925 amounted to about 4,361,000 cubic feet, valued at \$14,330,000, a decrease of about 8 per cent in quantity.

Granite (including rough and dressed stone) reported as sold for this purpose was 3,185,000 cubic feet, valued at \$10,730,000, a decrease of 10 per cent in quantity. The principal States producing granite for monumental work in 1925 were Vermont (1,187,760 cubic feet, of which the Barre district produced 981,560 cubic feet), Massachusetts (385,520 cubic feet, of which the Quincy district produced 311,120 cubic feet), Minnesota (260,730 cubic feet), Maine (159,440 cubic feet), Rhode Island (166,770 cubic feet), New Hampshire (147,470 cubic feet), Geor-

gia (109,720 cubic feet), Wisconsin (117,154 cubic feet), and California (124,200 cubic feet).

Sales of marble for monumental work (including rough and finished stone) in 1925 were reported as 1,176,000 cubic feet, valued at \$3,600,000, a decrease of 4 per cent in quantity. Vermont produced 624,250 cubic feet, Georgia 394,930 cubic feet, and Alabama, Arkansas, Massachusetts, Missouri, New York, North Carolina, and Tennessee much smaller amounts.

Street and Road Work and Concrete

Street and road material in general showed increased sales in 1925, although sales of paving blocks (39,787,000 blocks, valued at \$3,657,000) decreased 3 per cent in quantity, and stone sold for flagstones (755,000 cubic feet, valued at \$562,000) decreased 7 per cent. Stone sold for curbing (4,936,000 cubic feet, valued at \$4,310,000) increased 29 per cent in quantity. Total crushed stone amounted to about 75,110,000 short tons, valued at \$80,120,000 in 1925, an increase of 10 per cent in quantity, although final figures may show a somewhat higher percentage of increase. Crushed stone for concrete and road work (62,420,000 tons, valued at \$69,750,000) increased 8 per cent in quantity, and crushed stone reported as used for railroad ballast (12,690,000 tons, valued at \$10,370,000) increased about 20 per cent.

Fluxing Stone

Stone sold for fluxing to blast furnaces, open hearth steel works, smelters, and other metallurgical plants, amounted to about 22,634,000 short tons, valued at \$17,100,000, an increase of 15 per cent in quantity.

Refractory Stone

Stone reported for refractory use, which includes dolomite, quartzite, and mica schist, amounted to 1,224,000 short tons, valued at \$1,554,000, in 1925, an increase in quantity of 12 per cent. Raw dolomite reported as sold for the manufacture of refractories in 1925 amounted to 415,710 short tons, valued at \$381,215. Besides this quantity, operators who both quarry and dead-burn or sinter dolomite reported 392,145 tons of sintered material, valued at \$3,730,509. The quantity of raw dolomite reported was 35 per cent more than in 1924, and the sintered material increased 19 per cent. Quartzite (ganister) used in the manufacture of refractory brick, for furnace lining, and for the manufacture of ferrosilicon, amounted to 769,690 short tons, valued at \$1,018,385. This was an increase of 2 per cent in quantity. Sales of mica schist for furnace and kiln lining, which is quarried in Montgomery County, Pa., near Edge Hill, amounted to 38,600 tons, valued at \$154,400, an increase in quantity of 36 per cent.

Sales in 1925 of pulverized limestone for agricultural use amounted to about 1,970,000 tons, value at \$2,300,000, an increase of 46 per cent in quantity over the sales for 1924.

The accompanying table shows the estimated sales of stone in 1925 by uses and the sales for 1924 for comparison.

Stone Sold or Used by Producers in the United States, 1924 and 1925, by Uses

Use	1924		1925	
	Quantity	Value	Quantity	Value
Buildingcubic feet	28,352,380	\$33,175,656	30,115,000	\$34,687,000
Approximate equivalent in short tons.....	2,211,750		2,400,000	
Monumental stone.....cubic feet	4,750,980	15,305,386	4,361,000	14,330,000
Approximate equivalent in short tons.....	393,550		361,000	
Paving blocksnumber	41,037,570	3,578,676	39,787,000	3,657,000
Approximate equivalent in short tons.....	375,860		362,000	
Curbingcubic feet	3,815,850	3,468,821	4,936,000	4,310,000
Approximate equivalent in short tons.....	296,070		383,000	
Flaggingcubic feet	810,440	560,156	755,000	562,000
Approximate equivalent in short tons.....	59,840		56,000	
Rubble short tons	864,790	1,160,258	880,000	1,200,000
Riprapdo....	3,265,130	3,634,439	3,300,000	3,700,000
Crushed stonedo....	68,198,440	73,861,576	75,110,000	80,120,000
Furnace flux (limestone and marble).....do....	19,690,490	15,839,868	22,634,000	17,100,000
Refractory stone(ganister, mica schist, and dolomite) short tons	1,093,940	1,389,413	1,224,000	1,554,000
Manufacturing industries (limestone and marble) short tons...	4,733,770	4,410,559	5,000,000	4,800,000
Other uses (chiefly agricultural limestone) short tons.....	2,000,490	5,485,305	2,600,000	5,400,000
Total (quantities approximate), in short tons.....	103,184,120	\$161,870,113	114,310,000	\$171,420,000

Bureau of Mines Develops Method of Utilizing Small Stone in Production of Lime

Experiments conducted by the Bureau of Mines, Department of Commerce, with a sintering machine indicate that the machine has excellent possibilities for the production of lime from small stone, thus preventing waste of such stone, according to a statement issued August 7 by the bureau.

It is pointed out, in this connection, that one of the chief problems in the lime industry is the profitable utilization of the small stone, known as spalls and fines. Stone less than four inches in size cannot, it is stated, be calcined successfully in the shaft kiln, and thousands of tons of such stone are daily either wholly wasted or sold at prices hardly covering production costs. Lime is essential in the chemical, agricultural and building industries, it is stated further, being produced in every State in the Union, with an annual value of about \$40,000,000.

Bureau Fights Waste

The bureau, which has given considerable attention to possible solutions for the waste problem, stresses the importance from an economic standpoint of any improvement in quarrying or operation processes which will do away with such waste.

The advantages claimed for the sintering machine, according to the bureau, are low first cost, low maintenance cost, fair fuel ratio, continuous operation, and ability to use small stone. The full text of the bureau's statement follows:

An outstanding problem in the lime industry is the profitable utilization of the small stone, known as spalls and fines. Stone under four inches in size cannot be calcined successfully in the shaft kiln, and every day thousands of tons of such stone are either entirely wasted or are sold at prices so low as scarcely to cover the cost of production.

Lime is an essential commodity in the chemical, agricultural, and building industries. Lime is produced at over 400 plants, distributed throughout almost every State in the Union, and the annual production value is approximately \$40,000,000. Any improvement in quarrying or operation processes which will eliminate waste is, therefore, of real economic importance.

The Bureau of Mines of the Department of Commerce, through the Nonmetallic Minerals station at New Brunswick, N. J., has given much study to possible solutions for this waste problem. It has been found that fines are successfully calcined in the rotary kiln, and that rotary kilns are gradually being brought to a higher point of efficiency, but that rotary kilns present certain serious disadvantages.

Having in view the development of equipment less costly, less cumbersome, easier to manipulate and of higher fuel efficiency than the rotary kiln, exhaustive experiments have been made with a sintering machine such as is used for roasting sulphide ores.

Description of Machine

The sintering machine consists essentially of a series of traveling pallets with perforated floors. The pallets, loaded with crushed limestone, pass beneath a burner, which supplies an intense heat, and over a suction box which maintains a downward draft to carry the flame through the charge. Complete calcination is attained in 30 to 60 minutes. Small scale tests were followed by more complete tests on a small-size standard commercial machine. A general average of all tests made gave a fuel ratio of 5.5 pounds of lime per pound of kerosene plus 5 per cent of coal which was mixed with the charge. This compares favorably with present commercial practice. Several important changes may be found necessary before the highest point of efficiency is attained.

The advantages claimed for the sintering machine are low first cost, low maintenance cost, fair fuel ratio, continuous operation, and ability to use small stone. The results of the investigation indicate that the machine has excellent possibilities for the production of lime from small stone, but considerable redesigning is necessary to adapt it to this use.

A detailed description of the machine, the changes made in its construction, and the experiments conducted with it are given in Serial 2762, entitled "Manufacture of Lime from Small Stone with a Sintering Machine," a copy of which may be obtained on request from the Bureau of Mines, Department of Commerce, Washington, D. C.

THE PRESIDENT'S PAGE

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full financial support of numerous members. Therefore the Board instructed the Secretary to secure from the secretaries of the several local associations now subscribing various sums, the amounts contributed by each company in order that these contributions may be translated into terms of individual memberships. It is hoped that in the September issue of the Journal this may have been accomplished in order to indicate to the industry in terms of individual memberships the amounts actually contributed by our various members, thereby giving a more accurate reflection of the sources of our financial support than is now the case. It is the desire of the Board to so arrange our finances, with particular regard to direct payment in the form of dues by our members, as to relieve the present necessity of indirect contributions. Only in this way can our finances be placed on that firm and permanent foundation as will enable us from year to year to definitely plan our budget with a full knowledge as to our income. When, therefore, the list of memberships held by each company appears in the September issue of the Journal, it will be understood that the additional memberships indicated therein are merely a reflection of the contributions now made by those companies but which do not appear as memberships.

Local Association Activities

Western Pennsylvania Stone Producers Association

The Western Pennsylvania Stone Producers Association held its regular meeting on July 13 at the William Penn Hotel, Pittsburgh, Pennsylvania.

After the reading and approving of the minutes considerable time was given to the discussion of the rules and regulations as promulgated by the Department of Labor and Industry and upon conclusion, Mr. Duff moved, and Mr. Meals supported the motion that we approve all regulations as offered by the Department of Labor and Industry except the clause pertaining to **misfires** and Paragraph B, Rule 5, which should be clarified. The motion was carried.

The Secretary reported that sufficient of our assessments had been paid to permit him to send to James B. Savage, Treasurer of the National Crushed Stone Association, a check for Three Thousand Dollars, which pays our full assessment of Six Thousand Dollars for the year 1926.

A telegram was read from President Graves expressing his regret at not being able to attend the meeting and stating that he was looking forward to this pleasure in the near future. The Secretary was instructed to notify President Graves of the contemplated meeting to be held at Youngstown, Ohio, at which time opportunity would be afforded to visit the quarries of the Carbon Limestone Company, the Lake Erie Limestone Company and the Bessemer Limestone and Cement Company, and also to view the operations of the cement plant at Bessemer which is one of the largest operations in the country.

President Kanengeiser called for a report from Messrs. Andrews and King relative to the visit of Mr. Goldbeck.

Upon motion duly carried, the meeting adjourned.

Respectfully submitted,

J. C. KING,
Secretary.

New York State Crushed Stone Association

The best meeting to date of the 1926 season was held at Utica on Friday, July 23rd, when twenty-two members gathered at the office of the F. E. Conley Stone Company at 10:30 A. M.

From the starting point we motored out to the Yahnundasis Golf Club, a very attractive spot about four miles southwest of the city. Here an interesting hour was spent in sightseeing and group discussions of matters of interest.

Shortly after twelve luncheon was served, after which President Seitz opened a regular business meeting.

The minutes of the June meeting at Amsterdam were submitted by the Secretary and approved by vote, after Mr. Savage had requested a slight correction.

Mr. Seitz then asked Mr. Savage to kindly advise the membership in relation to the \$6,000 contribution to the National Association. Mr. Savage complied in a short statement.

Mr. Schaefer next spoke on the question of obtaining new pledges.

Mr. Lancaster moved that the August meeting be held at Syracuse at a time designated by the Chair. Supported by Mr. Murphy. Carried.

Mr. McGrew moved that in the event the Syracuse trip fell through, the meeting be held at Alexandria Bay. Seconded by Mr. Rice. Carried.

National President Graves was next called upon, and with his usual pleasing delivery, briefly touched upon the activities of the Association during the first half of 1926, particularly with reference to the Bureau of Engineering. He stated that while as yet no material or tangible results might be apparent, yet none the less, the Bureau is functioning vigorously and has many tests under way. It is laying a general foundation for future developments of probably far reaching importance. He cited as one example Mr. Goldbeck's proposed improvements in the design of bituminous macadam roads and stated that at least one state highway department was already building roads of the type proposed by Mr. Goldbeck. We thank the President for his first official visit with us this year.

Mr. Seitz then asked Ex. National President John Rice to favor us with a little talk on transportation, especially as to the use of trucks instead of cars in quarries. Mr. Rice told of the change from rail to truck at White Haven, Pa., and Winchester, Mass., where 7½ ton Mack trucks with special bodies were installed this Spring on about a 500 ft. haul. The truck movement in Mr. Rice's opinion was a trifle less than the old method of locomotive hauling.

Mr. Schmidt, Jr., also spoke on truck transportation in comparison with rail, and stated that by reason of the conditions at one of his plants, they found the use of 3½ ton auto car trucks more advantageous. These had been in use about four years with about a 500 ft. haul. While no comparisons in cost were available at this plant, Mr. Schmidt nevertheless stated that in his opinion it was purely a matter of individual plant conditions as to the most economical method to employ.

Mr. Schmidt then gave an interesting talk on blasting difficulties at the Bound Brook, N. J. plant. This was somewhat comparable to the General Crushed Stone Company case at Winchester, Mass., and the findings were also similar in many respects. A report on the case submitted by Mr. Schmidt for the information of the members seemed to have more than passing interest.

Mr. Seitz then extended the privileges of the floor to Edmund Shaw, Editor Rock Products, Chicago, who had come up from West Virginia to meet with us. Mr. Shaw

expressed his appreciation of the opportunity to be with us and again assured us of the cooperation of his organization at all times. We were glad to see Mr. Shaw again and welcome his visits at any time.

Mr. Beebe, of the Peerless Quarries, a new member, was asked to say a few words. He also voiced his approval of our activities, but pleaded that it was up to his Mr. Owens to assist him further. We were delighted to welcome Brother Beebe and hope to see him often.

Mr. Graves then informed the meeting of the illness of Mr. Schmidt, Sr., in Roosevelt Hospital, N. Y., and offered a motion that the Secretary be instructed to send flowers in the name of the Association. The motion was amended to also include a telegraphic message of sympathy. Seconded by Mr. McGrew. Carried.

President Seitz then spoke of the annual dues of \$1.00 and suggested that those who had not yet done so, please make payment to the Treasurer.

Mr. Schaefer moved a vote of thanks to our Utica hosts for arranging such a pleasant day's program. Seconded by Mr. Babcock and carried unanimously.

Mr. Sporborg then moved adjournment, which motion was passed at 3:30 P. M.

Following the meeting the party motored out through Clinton Village to the new Oriskany Falls plant of Peerless Quarries, Inc. Here various groups, guided by Harold Owens, A. L. Owens and H. R. Beebe viewed something radically different in a stone operation. The plant started this Spring and already gives promise of a healthy future. Located on a bluff above the O. & W. R. R., material is carried from the primary crusher through a rock tunnel to the secondary crushers and screens, thence dropped into large storage piles from which it is again reclaimed through artificial tunnels and belt conveyors, finally passing through a washing plant before being loaded into cars or trucks. Space will not permit going into detail on this operation which seems to have been carefully designed to meet existing conditions.

We all thoroughly enjoyed our inspection trip, which consumed over an hour.

Shortly after five, the meeting disbanded.

Respectfully submitted,

GEORGE E. SCHAEFER,
Secretary.

Ohio Crushed Stone Association

The regular monthly meeting of the Governing Board of the Ohio Crushed Stone Association was held in the offices of the Association in Columbus on July 15, 1926, with Mr. E. E. Evans, President, presiding.

Minutes of the June meeting were read and there being no corrections same were approved.

The question of new designs came in for a full share of discussion at this meeting, the same being entered into by every member present. It was Mr. Keever's suggestion that perhaps, as much benefit could be derived by building the pavements wider than is the common practice for the purpose of distributing traffic and thus attain the desired result of being able to maintain better edges.

This thought was concurred in by every member present, but the principal argument used against it was to the effect that it would increase the cost so materially that whatever benefits were to be derived would be overshadowed by the increased expenditures and that a change of design would give us a better pavement at no greater cost than we are now paying and perhaps at a somewhat reduced cost. Mr. Sharp suggested that we get the latest and the best information relative to macadam construction and maintenance and that we all work for the same and urged that each member of the Association support the Engineer.

The next discussions were relative to a new design for the "cold laid" tops such as Kentucky Rock, and such a one was submitted showing thickened and extended edges on the first base course, the second base course being of the penetration type or what is commonly known as black base with a Kentucky Rock wearing surface.

It was suggested by Mr. Sharp that each member should give plenty of thought and study to the present highway specifications and that we discuss same at each meeting and come to some conclusions as to what changes should be made in same when the Departmental Engineers revise these specifications this winter. The object in this is not merely for the purpose of fault finding, but to be able to offer something which is really constructive.

It was moved by Mr. Brandon, seconded by Mr. Keever, and unanimously carried that we adjourn.

Respectfully submitted,

CARL L. VAN VOORHIS,
Chief Engineer.

Severe Penalties Proposed for Overloading

(Continued from Page 8)

the proposed rules. In addition, the matter was brought to the attention of the American Railway Association with the request that they cooperate in having these items eliminated from the dockets.

A circular letter was sent out from the Secretary's Office to every producer of crushed stone in Southwestern Freight Bureau territory, advising them of the proposed rules and urging that they immediately communicate their objections to their respective railroads and to Chairman Leland.

The incorporating of Items 8499 and 8530 in the tariff schedules would unquestionably impose upon the shippers of crushed stone drastic penalties for occasional overloading. It is not to be expected that car loaders can invariably gauge within narrow limits the weight of material placed in the cars, even though they are most conscientious in their efforts to do so and certainly it does not seem reasonable, that for this occasional mistake, the shipper should be penalized to the extent suggested in this proposal.

The National Crushed Stone Association as well as its individual members has cooperated whole-heartedly with the American Railway Association in its efforts to obtain

The CRUSHED STONE JOURNAL

J. R. BOYD, Editor

A. T. GOLDBECK, Director, Bureau of Engineering

The National Crushed Stone Association

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The meeting was officially called to order at 10:15 A. M., with Chairman Graves presiding.

The first matter of importance to come before the meeting was whether or not the Association should establish a Research Associate at the U. S. Bureau of Standards, such associate to engage in research investigation jointly outlined by the Bureau of Standards and the Bureau of Engineering of the National Crushed Stone Association. The results would be written up in the form of a report by the research associate. This report would then be reviewed by the editorial committee of the Bureau of Standards and if agreeable to them would finally be published as an official bulletin of the Bureau of Standards. The Board enthusiastically approved this proposition and referred it to the Executive Committee with power to act when they felt it financially feasible to do so.

The question of establishing a testing laboratory in conjunction with the Bureau of Engineering of the Association was then placed before the meeting. This very important topic was thoroughly discussed and it was finally decided "that it is the sense of this meeting that we should bear in mind the ultimate establishment of a testing laboratory when the finances of the Association are such as to warrant this action."

The matter of placing the finances of the Association on a firmer foundation was then discussed and finally referred to the Executive Committee for a more detailed study, the results of which are to be reported back to the Board at its next regular meeting.

Ways and means for increasing membership in the Association were considered, final action being left to the discretion of the President.

It was proposed that the President, Director of the Bureau of Engineering, Secretary and such members of the Board as could spare the time make a trip through the West for the purpose of meeting with and organizing crushed stone producers in the states west of the Mississippi River and to visit the capitals of these states for the purpose of effecting a more sympathetic understanding of the problems of mutual interest to the crushed stone producers and State Highway Departments.

It was felt by those present that a trip of this nature would be very desirable and do much to stimulate interest and gain new members throughout the western territory. The matter was referred to the Executive Committee with power to act.

The selection of the 1927 Convention city next occupied the attention of the meeting and after carefully considering the advantages and disadvantages of the numerous suggested cities, it was decided to hold the 1927 Convention at Detroit, Michigan, on January 17, 18, 19 and 20.

A very enjoyable luncheon concluded the meeting.

maximum loading of transportation equipment. South-western carriers are receiving additional revenue as a result of the heavy loading of crushed stone and in cases where overloading occurs, due to the inability of the loader to accurately gauge the capacity of the car, it has been customary for the carrier to lighten the load and use the unloaded material as compensation for the additional service rendered.

If it is to be the policy of the carriers to impose severe penalties for the overloading of cars, crushed stone producers will of necessity be forced to reduce the amount of material loaded into cars. This would be most unfortunate as it would tend to nullify the excellent results accomplished by the American Railway Association, tending towards the maximum utilization of transportation equipment.

The National Association has been informed that these items will be withdrawn from the docket, but it behooves every crushed stone producer throughout the country to be alert for proposals of this nature within his territory and to immediately inform the Washington Office, should they come to his attention.

BOARD OF DIRECTORS HOLDS SEMI-ANNUAL MEETING IN ATLANTIC CITY

Following the precedent established last year, the semi-annual meeting of the Board of Directors of the National Crushed Stone Association was held at the Ambassador Hotel, Atlantic City, on Friday, July 30, 1926.

The meeting was exceedingly well attended, twenty-five being present from Canada, Texas and California, as well as from Wisconsin, Tennessee and other states east of the Mississippi River. Following is a list of those who were present:

CHIPS

An Essay on Pants by a Small Boy

"Pants are made for men and not for women. Women are made for men and not for pants. When a man pants for a woman and a woman pants for a man, that makes a pair of pants. Pants are like molasses—they are thinner in hot weather and thicker in cold weather. There has been much discussion as to whether pants is singular or plural. Seems to us that when men wear pants it is plural and when they don't wear pants it is singular. If you want to make the pants last make the coat first."—Hamilton Herald-Record.

Henry's Alibi

Teacher (to boy sitting idly in school during writing time)—"Henry, why are you not writing?"

Henry—"I ain't got no pen."

Teacher—"Where's your grammar?"

Henry—"She's dead."—Dry Goods Economist.

A newspaper published in another state offered a prize for the best answer to the conundrum:

"Why is a newspaper like a woman?"

The prize was won by a woman who sent in this answer:

"Because every man should have one of his own and not run after his neighbor's."—Texas Highway Bulletin.

How It Is Done

"You should have seen Mabelle dance the Charleston last night."

"Dance nothing!" She was just standing there watching, and a June bug fell down her back."—Michigan Gargoyle.

What He Lacked

A colored agent was summoned before the Insurance Commissioner.

"Don't you know," said the Commissioner, "that you can't sell life insurance without a State license?"

"Boss," said the darkey, "You suah said a moufful. I knowed I couldn't sell it, but ah didn't know the reason."—Texas Highway Bulletin.

"Did you see Oliver Twist, aunty?"

"Hush, child. You know I never attend those modern dances."—Louisiana Highway Magazine.

"Liza, yo' remin' me fo' all de world ob brown sugah."

"How come date, Sam?"

"Yo' am so sweet and unrefined."—Exchange.

Disillusioned

"I'm getting up a little poker game, Major," invited the friend. "Would you like to join us?"

"Sir, I do not play poker."

"I'm sorry. I was under the impression that you did."

"I was once under that impression myself, sir."

Small Change

A negro servant, on being ordered to announce visitors to a dinner party, was directed to call out in a loud, distinct voice their names. The first to arrive was the Fitzgerald family numbering eight persons. The negro announced Major Fitzgerald, Miss Fitzgerald, Master Fitzgerald, and so on.

This so annoyed the master that he went to the negro and said, "Don't announce each person like that; say something shorter."

The next to arrive were Mr. and Mrs. Penny and their daughter. The negro solemnly opened the door and called out, "Three Cents."—Louisiana Highway Magazine.

Effective Method

"Black boy, whut yo' all runnin' fo'?"

"I'se gwine to stop a fight."

"Who all's fightin'?"

"Jes me an' anothah niggah."—Exchange.

Arithmetic Bugs

A dusky son of Alabama was busily engaged in a cootie hunt—when asked by a sergeant what he was doing, he replied:

"I'se a-huntin' for dem 'rithmetic bugs."

"What do you mean, arithmetic bugs? Why do you call them arithmetic bugs?"

"Cause dey add to ma misery, dey subtracts from ma pleasure, dey divide ma attention, and dey multiply like hell."—Exchange.

Hit Straight

The motorist was a stranger in Boston's streets. It was evening. A man approached.

"Sir," said he, "your beacon has ceased its function."

"What?" gasped the astonished driver.

"Your illuminator, I say, is shrouded in unmitigated oblivion."

"My dear fellow, I—"

"The transversal ether oscillations in your incandenser have been discontinued."

Just then a newsboy yelled, "Mister, he means yer lamp's out!"—The Maine Motorist.

Not so long ago a chauffeur was brought in after having run down a man.

"Did you know that if you struck this pedestrian he would be seriously injured?" the judge asked.

"Yes, sir," replied the chauffeur.

"Then why didn't you zig zag your car and miss him?"

"He was zig zagging himself and out-guessed me, your honor," was the answer.—The Maine Motorist.